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and compressible coil 40 expands to fit the space between the sapphire tube 30 and the ceramic tube 38, tight contact between the two tubes is maintained, so that rapid thermal transfer from the inner sapphire tube 30 to the outer ceramic tube 38 is assured.

IN THE CLAIMS

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1. (Amended) A thermal transfer device comprising a thermal source maintained in parallel to a thermal sink and having a thermally conductive, compressible, multiple coil between the thermal source and the thermal sink.
 2. (Amended) The thermal transfer device according to claim 1 wherein the thermal sink surrounds the thermal source.
 3. (Amended) The thermal transfer device according to claim 1 wherein said thermal source is made of a dielectric material.
 4. (Amended) The thermal transfer device according to claim 3 wherein said thermal source is made of sapphire.
 5. (Amended) The thermal transfer device according to claim 1 wherein said thermal sink is made of a dielectric material.
 6. (Amended) The thermal transfer device according to claim 1 wherein said thermally conductive coil is made of copper.
 7. (Amended) The thermal transfer device according to claim 6

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wherein said copper coil is made from copper wire about 0.011 inch thick.

8. (Amended) The thermal transfer device according to claim 1 wherein the thermal source and the thermal sink are concentric.

9. (Amended) The thermal transfer device according to claim 8 wherein the surface of the thermal sink facing the thermal source is grooved to accommodate the compressive coil.

10. (Amended) The thermal transfer device according to claim 2 wherein the thermal sink includes a means of cooling.

11. (Amended) The thermal transfer device according to claim 1 wherein the conductive, compressible, multiple turn coil fills the space between the thermal source and the thermal sink.

12. (Amended) In a vacuum chamber comprising a processing chamber including a substrate to be processed, and a processing gas inlet source that traverses a microwave energy source for forming a plasma from a processing gas, the improvement comprising

a microwave impervious gas inlet made of a dielectric material in the form of a tube that provides a thermal source, the dielectric tube surrounded by a concentric dielectric tube that provides a thermal sink, and a compressible, conductive multiple turn coil between the thermal source and the thermal